This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 42. (currently amended)   A method of partitioning data records in a computer into groups, comprising the steps of:

    (a)   defining a function of a distribution of ~~the~~ values of a designated variable associated with the data records, wherein the function comprises a combination of measures, <u>one of the measures being weighted by a weighting factor</u>;

    (b)   partitioning the values of ~~a~~ <u>the</u> designated variable into two or more groups, wherein ~~the~~ <u>a</u> value of the function is determined by applying an optimization procedure; and

    (c)   assigning ~~each~~ <u>a</u> data record to a group according to the ~~value~~ <u>values</u> of the designated variable.

Claim 43. (previously presented)   A method as recited in claim 42 wherein said partitioning comprises partitioning of data records into groups of approximately equal size.

Claim 44. (previously presented)   A method as recited in claim 42 further comprising the step of selecting a partition from many computed solutions yielding acceptable performance.

Claim 45. (previously presented)   A method as recited in claim 42 wherein said optimization procedure results in an optimal assignment.

Claim 46. (previously presented)   A method as recited in claim 42 wherein said function is a combination of entropy and adjacency.

Claim 47. (previously presented)   A method as recited in claim 42 wherein said combination is linear.

Claim 48. (currently amended)   A method as recited in claim 42 wherein the designated variable ~~may~~ simultaneously <u>comprises</u> ~~comprise~~ a plurality of values.

Claim 49. (previously presented)   A method as recited in claim 42 wherein the designated variable corresponds to a designated DNA locus.

Claim 50. (previously presented)   A method as recited in claim 42 wherein the data records are applicable to agriculture.

Claim 51. (previously presented) A method as recited in claim 42 wherein the data records are applicable to forensic science.

Claim 52. (previously presented)   A method as recited in claim 51 where the forensic science application includes DNA analysis.

Claim 53. (previously presented)   A method as recited in claim 42 wherein the data records are applicable to space science.

Claim 54. (previously presented)   A method as recited in claim 42 wherein the data records comprise references to textual information.

Claim 55. (previously presented)   A method as recited in claim 42 wherein the value of the function is minimized.

Claim 56. (currently amended)   A method of partitioning data records in a computer into groups of approximately equal size, comprising the steps of:

      (a) defining a function of a distribution of ~~the~~ values of a designated variable associated with the data records, wherein the function comprises a combination of measures of entropy and adjacency, <u>adjacency being weighted by a weighting factor</u>;

(b) partitioning the values of ~~a~~ the designated variable into two or more groups, wherein ~~the~~ a value of the function is determined by applying an optimization procedure; and

(c) assigning ~~each~~ a data record to a group according to the ~~value~~ values of the designated variable.

Claim 57. (previously presented)   A method as recited in claim 56 further comprising the step of selecting a partition from many computed solutions yielding acceptable performance.

Claim 58. (previously presented)   A method as recited in claim 56 wherein said optimization procedure results in an optimal assignment.

Claim 59. (previously presented)   A method as recited in claim 56 wherein said combination is linear.

Claim 60. (currently amended)   A method as recited in claim 56 wherein the designated variable ~~may~~ simultaneously comprises ~~comprise~~ a plurality of values.

Claim 61. (previously presented)   A method as recited in claim 56 wherein the data records are applicable to forensic science.

Claim 62. (previously presented)   A method as recited in claim 56 wherein the designated variable corresponds to a designated DNA locus.

Claim 63. (previously presented)   A method as recited in claim 56 wherein the data records are applicable to agriculture.

Claim 64. (previously presented)   A method as recited in claim 56 wherein the data records are applicable to space science.

Claim 65. (currently amended)   A method of partitioning ~~data for a~~ data records ~~for~~ of a database in a computer, wherein the database is indexed using a tree of nodes, wherein the tree of nodes comprises a root node which is connected to two or more branches originating at the root node, wherein each branch terminates at a node, wherein each node other than the root node ~~may be~~ is a non-terminal node or a leaf node, wherein each non-terminal node is connected to two or more branches originating at the non-terminal node and terminating at a node, wherein the tree-structured index comprises one or more tests associated with each non-terminal node, said method comprising the steps of:

(a)   identifying naturally occurring sets of clusters in the data records of the database;

(b)   defining for each identified set of clusters a ~~test~~ query that evaluates one of a Boolean expression or a decision tree and ~~that~~ assigns each data record within the set of clusters; and

(c)   associating each ~~test~~ query defined in step (b) with a non-terminal node and an associated set of clusters defined in step (a), and associating with each cluster within the set of clusters one branch originating at the non-terminal node, said branch forming part of one or more paths leading to leaf nodes comprising the data records assigned to the cluster by the ~~test~~ query.

Claim 66. (previously presented)   A method as recited in claim 65 wherein said partitioning comprises partitioning of data records into groups of approximately equal size.

Claim 67. (currently amended)   A method as recited in claim 65 wherein said ~~tests~~ queries are determined by a combination of entropy and adjacency.

Claim 68. (previously presented)   A method as recited in claim 67 wherein said combination is linear.

Claim 69. (previously presented)   A method as recited in claim 65 wherein the data corresponds to DNA.

Claim 70. (previously presented)   A method as recited in claim 65 wherein the database is applicable to agriculture.

Claim 71. (previously presented)   A method as recited in claim 65 wherein the database is applicable to forensic science.

Claim 72. (previously presented)   A method as recited in claim 65 wherein the database is applicable to space science.

Please add the following new claims:

Claim 73.   (New)   A method as recited in claim 65 comprising creating a tree-structured index for a database of a computer.

Claim 74.   (New)   A method as recited in claim 65 comprising defining a partition of data records of the database using entropy/adjacency partition assignment.

Claim 75.   (New)   A method as recited in claim 65, both data clustering and entropy-adjacency partitioning being used in the same tree of nodes.